



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty Docket No.: 2310.101.US

In re the Patent application of

Dan Keith McCain

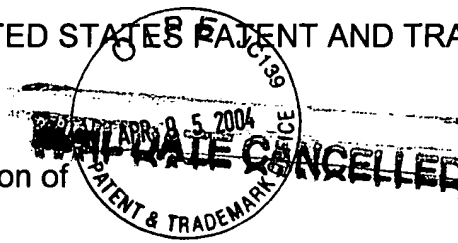
Examiner: Unknown

Serial No.: 10/783,413

Group Art Unit: Unknown

Filed: February 20, 2004

For: Wind Energy Conversion System



SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

**MAIL STOP: PATENT APPLICATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to the duty imposed by 37 C.F.R. §1.56 to disclose information which may be material to the above-identified patent application, and in support of the Petition for Special Status filed concurrently with the subject application, the Examiner's attention is directed to the documents listed on the enclosed Supplemental Information Disclosure Statement. Copies of the documents listed are enclosed herewith.

Since this Supplemental Information Disclosure Statement is being filed in compliance with 37 C.F.R. §1.97(b), within three (3) months of the filing date of the above-identified application and/or prior to the mailing date of the first Official Action, no fee is required in connection with its filing.

## DISCUSSION OF THE REFERENCES

This discussion of the Supplemental Information Disclosure Statement references is provided in support of the Petition for Special Status which was filed concurrently with the subject application. As explained below, none of the references cited in the Supplemental Information Disclosure Statement teaches or suggests a wind energy conversion system having the features recited in claims 1-29 of the subject patent application.

U.S. Patent No. 4,274,809 to Delgado et al discloses a vertical axis wind turbine comprising a hub 16, at least one arm 14 extending from hub 16, and at least one air foil configured blade 10 hingedly connected to an end of arm 16 for rotation about a vertical axis. A tensioned tie wire 26 is attached to the blade 10 and is entrained around a pulley wheel 32 connected to tension spring 36 to exert a force on the blade 10 tending to relieve bending stresses caused by centrifugal force. Delgado et al does not teach or suggest a balancing mechanism for balancing the torques produced by counter-rotating wind turbines as recited in claims 1-13 of the subject application, an air gap adjustment mechanism including a track along which a stator is moved as recited in claims 14-21 of the subject application, or a hood and exhaust plenum as recited in claims 22-29 of the subject application.

U.S. Patent No. 4,365,929 to Retz discloses a vertical wind turbine comprising a tower 100 having a base 102 mounted to framework 104 supporting a turbine rotor 106, an upper air deflector 108 for forcing air downwardly in a spiral pattern onto the rotor 106, and a lower air deflector 110 for forcing air upwardly in a semi-spiral pattern into the rotor 106. The rotor 106 includes vertical shafts 172 and 182, a plurality of radially extending scoops 200, and a plurality of radially extending blades 194 rotatable about a

vertical axis. Retz does not disclose counter-rotating wind turbines and does not teach or suggest a balancing mechanism for balancing the torques produced by counter-rotating wind turbines as required by claims 1-13 of the subject application. Retz does not disclose a stator much less an air gap adjustment mechanism including a track along which a stator is moved as recited in claims 14-21 of the subject application. The deflector 108 of Retz does not have the features of a hood recited in claims 22-29 of the subject application, and Retz does not disclose an exhaust plenum as also recited in claims 22-29.

U.S. Patent No. 4,525,124 to Watson et al discloses a vertical axis wind turbine having air foils 2 and 8 attached by arms 3, 4 and 6, 7 to a rotatable vertical shaft 5 supported by a tower 11. Arms 3, 4 and 6, 7 help balance air foil stress against reaction forces. Watson et al does not disclose counter-rotating wind turbines or a balancing mechanism for balancing the torques produced by counter-rotating wind turbines as required by claims 1-13 of the subject application. Watson et al does not disclose a rotor and stator and does not teach or suggest the feature of an air gap adjustment mechanism as recited in claims 14-21 of the subject application. Watson et al also does not disclose a hood and exhaust plenum as recited in claims 22-29 of the subject application.

U.S. Patent No. 4,764,090 to Danson discloses a crosswind axis turbine 10 including a plurality of wind driven air foil blades 12a, 12b, 12c and 12d independently rotatable about their respective vertical axes 19 to effect rotation of an output shaft 22. The angle of attack of each blade is adjustable. Danson does not teach or suggest a balancing mechanism for balancing the torques produced by counter-rotating wind turbines as required by claims 1-13 of the subject application. Danson does not

disclose or suggest an air gap adjustment mechanism as recited in claims 14-21 of the subject application. In addition, Danson does not teach or suggest a hood or an exhaust plenum as recited in claims 22-29 of the subject application.

U.S. Patent No. 5,226,806 to Lubbers discloses a vertical axis wind turbine comprising a vertical axle 12 rotated by wind vanes 20. The axle 12 is supported by guy wires 16 at its upper end. Each wind vane 20 includes a frame 26 pivotable to maintain a stable rate of rotation for the wind vanes. Lubbers does not disclose a balancing mechanism for balancing the torques produced by counter-rotating wind turbines as recited in claims 1-13 of the subject application, an air gap adjustment mechanism as required by claims 14-21 of the subject application, or a hood and exhaust plenum as required by claims 22-29 of the subject application.

U.S. Patent No. 4,979,871 to Reiner discloses a wind turbine 10 comprising a hub 20 and blades 18 extending radially outwardly from the hub 20 to effect rotation of the hub about a vertical axis 22. A torque tube 24 is attached to the hub 20 for rotation therewith and is supported by guy cables 40. The rotational speed of the torque tube 24 is controlled by power take-off means 44. The pitch of the blades 18 is controlled by pitch control means 102. Reiner does not disclose or suggest a balancing mechanism for balancing the torques produced by counter-rotating wind turbines as characterized in claims 1-13 of the subject application. Reiner also does not suggest an air gap adjustment mechanism as recited in claims 14-21 of the subject application. Furthermore, Reiner does not teach or suggest a hood and exhaust plenum as characterized in claims 22-29 of the subject application.

U.S. Patents No. 5,503,530 and 5,664,418 to Walters disclose a vertical axis wind turbine held in place by a frame 8 and comprising an inner turbine rotor 1 having a

vertical axle 2 and impellers 4. The frame 8 is formed of a series of deflector cylinders 9. The turbine rotor 1 drives a drive shaft 23. There are no teachings or suggestions whatsoever by Walters of a balancing mechanism as recited in claims 1-13 of the subject application, of an air gap adjustment mechanism as recited in claims 14-21 of the subject application, or of a hood and exhaust plenum as recited in claims 22-29 of the subject application.

U.S. Patent No. 5,518,365 to Verastegui and European Patent No. 0 679 805 A1 disclose crosswind axis rotor structure 1 having multiple orientable aerodynamic blades 2 fastened around its periphery and mounted parallel to a vertical axis of the rotor structure. The blades 2 are fastened to the rotor structure 1 by pivoting fastening means 5. The rotor structure 1 may be a double arm rotor structure with upper arms respectively connected to lower arms by stabilizers 3. The Verastegui patent and the European patent do not teach or suggest a balancing mechanism as required by claims 1-13 of the subject application, an air gap adjustment mechanism as required by claims 14-21 of the subject application, or a hood and exhaust plenum as required by claims 22-29 of the subject application.

U.S. Patent No. 6,242,818 B1 to Smedley discloses a wind turbine 10 comprising a stationary column 12 and a rotor 14 that rotates on the column 12. A coil 16 rotates with the rotor 14 past a coil 18 on the column 12 for generating electrical power. The rotor 14 comprises blades 38 and pivotal doors 40 spaced around its periphery. The doors 40 pivot depending on the rotational speed of the wind turbine to maintain the rotational speed at a safe level. Smedley does not teach or suggest a balancing mechanism as recited in claims 1-13 of the subject application, an air gap adjustment mechanism as recited in claims 14-21 of the subject application, or a hood and exhaust

plenum as recited in claims 22-29 of the subject application.

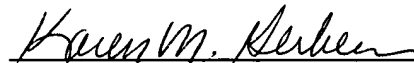
U.S. Patent No. 6,688,842 B2 to Boatner discloses a vertical axis wind engine 10 comprising a rotor 12 mounted for rotation about a vertical axis 13 and an air foil 14A pivotally mounted on the rotor 12 for pivotal movement about a pivot axis 15A parallel to the vertical axis 13. Boatner does not teach or suggest a balancing mechanism as recited in claims 1-13 of the subject application, an air gap adjustment mechanism as recited in claims 14-21 of the subject application, or a hood and exhaust plenum as recited in claims 22-29 of the subject application.

U.S. Patent Application Publication No. US2004/0047732 A1 to Sikes and the First National Power Corporation website documents disclose a vertical wind turbine or dynamo comprising one or more rotor elements 10 rotatable about a vertical axis 30. Each rotor element 10 has three concave main reaction surfaces 15 spaced at 120° intervals and three secondary reaction surfaces 45. The rotor elements 10 may be fastened into rotor sets wherein the rotor elements are counter-rotating. A deflector 60 having vanes 70 may be provided to increase power and reduce drag. The deflector 60 may be pivotally mounted relative to the axis of rotation 30 and may be used to decrease rotational speed of the rotor sets. The counter-rotating sets of rotor elements are attached to generator magnets or coils 85. U.S. Design Patent No. 300,932 to Sikes discloses an ornamental design for a windmill having concave main reaction surfaces. The Sikes patent and publication and the First National Power Corporation website documents do not teach or suggest a balancing mechanism as recited in claims 1-13 of the subject application, an air gap adjustment mechanism as recited in claims 14-21 of the subject application, or a hood and exhaust plenum as recited in claims 22-29 of the subject application.

The submission of the listed documents is not intended as an admission that any

such document constitutes prior art against the claims of the present application.  
Applicant does not waive any right to take any action that would be appropriate to  
antedate or otherwise remove any listed document as a competent reference against  
the claims of the present application.

Respectfully submitted,

  
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Hand-Delivered: 4-5-04

FORM PTO 1449 (modified)

ATTY DOCKET NO. 2310.101.US

SERIAL NO. 10/783,413

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

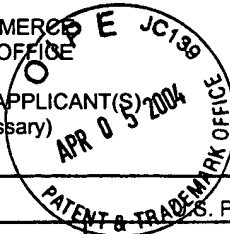
APPLICANT Dan Keith McCoin

LIST OF REFERENCES CITED BY APPLICANT(S)  
(Use several sheets if necessary)

FILING DATE 02/20/2004

GROUP

Date Submitted to PTO:



## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	4,274,809	06/23/1981	Delgado et al			
	4365,929	12/28/1982	Retz			
	4,525,124	06/25/1985	Watson et al			
	4,764,090	08/16/1988	Danson			
	4,979,871	12/25/1990	Reiner			
	5,226,806	07/13/1993	Lubbers			
	5,503,530	04/02/1996	Walters			
	5,518,367	05/21/1996	Verastegui			
	5,664,418	09/09/1997	Walters			
	6,242,818	06/05/2001	Smedley			
	6,688,842	02/10/2004	Boatner			
	Des. 300,932	05/02/1989	Sikes			

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
0 679 805 A1	11/2/95	Europe			

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

		News from PR Newswire - Internet news article, "First National Power Corporation (Formerly Capstone International Corp.) Enters Discussions to Acquire WindCrank (TM) and Vertical Wind Turbine Technologies LLC of Hawaii, February 20, 2004, 7 pages.

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



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## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		US2004/0047732 A1	03/11/2004	Sikes			

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## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)


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